

Foreword

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Over the past few decades, researchers have produced a body of literature that examines the educational importance of space, finding that how learning spaces are designed and equipped makes a difference to the teaching and learning process. Put another way, the formal learning spaces in which much teaching takes place, such as classrooms and laboratories, are not neutral. Different types of classrooms can facilitate, or retard, the implementation of different teaching techniques, and we have only begun to study the ways in which innovative learning environments may enhance equity in the education of our increasingly diverse student body.

Technology is an especially important factor in shaping space. Digital technologies, in particular, can enhance formal learning spaces and extend their capabilities – or they can be expensive distractions. Moreover, research dating back to the early days of the internet has consistently shown that virtual spaces matter. Even if MOOCs are unlikely to replace face-to-face classes completely, the online environments that they exemplify, and in which students interact and collaborate, have distinctive properties that give them enormous educational potential but also create pitfalls for the inexperienced or unwary.

We also know that learning is not confined to the classroom. For post-secondary students, a great deal of learning takes place in the informal spaces that are everywhere on our campuses -- some created with much intention and forethought, and some simply as a byproduct of other construction. Informal spaces are under-studied, but what evidence we have indicates that, like formal instructional spaces, how they are configured (and where they are located) matters greatly to whether they are used by students at all. If they are used, the design and location affects how often they are used, for what types of activities, how connected to formal classes, and so forth.

The complex relationship between space and digital technology is only one of many forces that have combined to shape higher education in recent years. Another is diversity. American colleges and universities serve a larger proportion of the population than ever, as enrollments have surged over the last few decades. This new student population is not only larger but more diverse in many ways – for example, in terms of ethnicity, religion, native language, economic status, gender, and first-generation status. When the post-secondary student population was more homogeneous, it was possible to believe that all students learned in much the same way. The increasing diversity of our student body highlights the fact that different students may have different needs, and their success may be promoted by different learning environments and pedagogical approaches. These teaching and learning environments also provide rich opportunities to help prepare students to be global citizens.

How best to configure the environments in which faculty teach and a diverse group of students learn is a central challenge facing colleges and universities as they consider revising aging campus classrooms or constructing new buildings. Happily, two further changes in the landscape of higher education will help faculty, researchers, and administrators meet this challenge.

The first is a renewed focus within colleges and universities on the teaching mission, a change that has perhaps been easiest to see at large research-focused institutions but is evident

across the landscape of higher education. Graduate students in a wide variety of fields now receive pedagogical training along with their disciplinary education, a combination that was practically unheard of twenty years ago. A growing number of departments and programs have created teaching-focused faculty positions that encourage faculty not only to teach well but also to systematically study their own teaching and work to improve it. And this focus on teaching can be seen in a shift toward the view that the responsibility for student learning is shared between faculty and students.

The second is an increasing recognition across higher education of how much is known about teaching and learning. The science of learning has advanced tremendously in recent decades, giving rise to an impressive body of knowledge about the types of practices and environments that facilitate learning, including the emerging consensus around the importance of active or student-centered learning.

The studies in this special issue represent the right kind of response to the need to construct and configure learning spaces that facilitate the learning of a diverse student body. They both apply and contribute to the science of learning by investigating different ways of integrating technology and space, and by doing so in authentic instructional environments. As important as laboratory research has been in developing knowledge of the processes that underlie learning, educational research conducted by teachers in live educational environments is also needed, because such studies have strong external validity and are credible for instructors who are considering similar innovations in their own classes. For educators who wish to be inspired and informed with respect to space and technology, the case studies in this volume are an excellent place to start.